

FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE  
(Rev. 2-32) PATENT AND TRADEMARK OFFICE

ATTY. DOCKET NO.

10164-1 (125-497)

SERIAL NO.

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Liu et al.

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## U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
WG	3,911,041	10/07/75	Kaeding et al.	260	682	
WG	3,939,058	02/17/76	Plank et al.	208	120	
WG	3,972,832	08/03/76	Butter et al.	252	437	
WG	4,141,859	02/27/79	Plank et al.	252	455	
WG	4,171,257	10/16/79	O'Rear et al.	208	120	
WG	4,251,348	02/17/81	O'Rear et al.	208	61	
WG	4,282,085	08/04/81	O'Rear et al.	208	120	
WG	4,347,121	08/31/82	Mayer et al.	208	58	

## FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANSLATION	
						YES	NO
WG	EP 0 347 003 B1	12/20/89	EPO	<del>C10G</del>	<del>11/05</del>		
WG	EP 0 372 632 B1	06/13/90	EPO	<del>G10G</del>	<del>69/04</del>		
WG	EP 0 385 538 B1	09/05/90	EPO	<del>G10G</del>	<del>11/16</del>		
WG	EP 0 490 435 B1	06/17/92	EPO	<del>E10G</del>	<del>11/05</del>		
WG	WO 98/03612	01/29/98	PCT	<del>E10G</del>	<del>11/00</del>		

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

WG		"The Paragon Process: A New Hydrocracking Concept", D. J. O'Rear, Ind. Eng. Chem. Res. 26:2337-2344 (1987).
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EXAMINER *W. B. [Signature]* DATE CONSIDERED *5-30-2000*

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication with applicant.

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WG	4,390,413	06/28/83	O'Rear et al.	208	61	
WG	4,423,266	12/27/83	Young	585	481	
WG	4,436,614	03/13/84	Olbrich et al.	208	89	
WG	4,502,945	03/05/85	Olbrich et al.	208	120	
WG	4,582,815	04/15/86	Bowes	502	64	
WG	4,590,321	05/20/86	Chu	585	415	
WG	4,918,256	04/17/90	Nemet-Mavrodin	585	415	
WG	4,980,053	12/25/90	Li et al.	208	120	

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WG	EP 0 385 538 A1	09/05/90	EPO	<del>6106</del>	<del>11/16</del>		

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

WG			"Cracking of FC and Coker Naphthas by ZSM-5 Catalyst and Equilibrium FC Catalyst", Hsing et al., Symposium on Hydrogen Transfer in Hydrocarbon Processing, Div. Of Petroleum Chemistry Inc., 208th Meeting, Am. Chem. Soc. Washington, D.C., p. 388-392 (1994).
WG			"Deep Catalytic Cracking Plant Produces Propylene in Thailand", Oil & Gas Journal, p. 49-53 (1998).
WG			"Deep Catalytic Cracking, Maximize Olefin Production", Chapin et al, NPRA Annual Meeting, AM-94-43, p.1-14 (1994).

EXAMINER *W. Duff* DATE CONSIDERED 5-30-2000

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WG	5,019,664	05/28/91	Del Rossi et al.	585	419	
WG	5,026,936	06/25/91	Leyshon et al.	585	315	
WG	5,053,374	10/01/91	Absil et al.	502	64	
WG	5,171,921	12/15/92	Gaffney et al.	585	653	
WG	5,182,242	01/26/93	Marler	502	66	
WG	5,292,976	03/08/94	Dessau et al.	585	322	
WG	5,348,643	9/20/94	Absil et al.	208	114	
WG	5,380,690	01/10/95	Zhicheng et al.	502	65	
WG	5,389,232	02/14/95	Adewuyi et al.	208	120	

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WG			"DCC Flexibility for Isoolefins Production", Li et al., Symposium on Advances in Fluid Catalytic Cracking, Division of Petroleum Chemistry, Inc. 206th National Meeting, Am. Chem Soc. Chicago, p. 581-583 (1993).				
WG			"DCC - A New Propylene Production Process from Vacuum Gas Oil", Zaiting et al., National Petroleum Refiners Association", AM-90-40, p. 1-14 (1990)				

EXAMINER *M. Ruff* DATE CONSIDERED 5-30-2000

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WG	5,456,821	10/10/95	Absil et al.	208	114	
WG	5,472,594	12/05/95	Tsang et al.	208	114	
WG	5,637,207	06/10/97	Hsing et al.	208	164	
WG	5,670,037	9/23/97	Zaiting et al.	208	114	

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						YES	NO

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

WG			"Commercial Trial of DCC (Deep Catalytic Cracking) Process for Gaseous Olefins Production", Xieqing et al., Research Institute of Pet. Proc., SINOPEC (undated)				
WG			"Deep Catalytic Cracking for Light Olefins", Chapin et al., Presented at Fifth World Congress of Chemical Engineering, San Deigo (1996).				

EXAMINER *W. B. Smith*

DATE CONSIDERED 5-30-2000

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